DOI: 10.1002/pra2.297

PANELS AND ALTERNATIVE EVENTS

The use of ICT during COVID-19

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Abstract

ICTs are pivotal in the existing social order and especially during the COVID-19 global pandemic. This panel focuses on the use of ICTs by different actors, including individuals, nonprofit organizations, and governments around the globe in responding to this COVID crisis. We tackle three essential questions about ICTs and the global crisis. First, what role do ICTs play in a global crisis? Second, how do ICTs affect social order when tensions between control, autonomy, and power shift? Third, what are the theoretical and practical implications of ICT use during a global health crisis? Each of the panelists will discuss their ongoing research in social informatics or health informatics as relates to the panel theme and central questions in order to provide a holistic view of the role of ICTs during this global pandemic.

KEYWORDS

COVID-19, global crisis, health informatics, ICT use, social informatics

COVID-19 has become a global, transnational health threat. By June 15, 2020, the pandemic spread to more than 200 countries, infecting more than seven million people, as it turned into a global health crisis causing fundamental societal changes. Not only is this crisis challenging the public health system in each country, but it is also, more broadly, shaking up the social order. People's daily lives are changing under stay at home orders and many are overwhelmed with information.

In today's global network society, social structure and organizational arrangements are largely made up of information networks powered by informational and communication technologies (ICTs) (Castells, 2000). ICTs, broadly defined here to include internet, platforms, networks, phones, apps, and databases, as well as underlying infrastructure, are a pivotal factor in the existing social order, particularly during the COVID-19 global pandemic. The importance of ICTs extends beyond identifying, tracing, understanding, managing, treating, and perceiving pandemics (Wilson & Jumbert, 2018). More fundamentally, ICTs are our best chance to maintain social order during a pandemic.

Using ICTs during the COVID-19 pandemic illustrates both the limitations of and opportunities for ICT use. On the negative side, this global health crisis is seen as an information crisis (Xie et al., 2020). There is insufficient information for decision making, unreliable information for healthy public debate, inaccessible information to meet people's daily information needs, and spread of misinformation, disinformation, and fake news. At the same time, ICTs allow for faster responses by supporting large-scale participation and mass collaborations across state and national boundaries. This includes, for example: involving new entities in existing humanitarian collaboration network (e.g., volunteer and technical communities who assist during disasters, including pandemics); facilitating new forms

83rd Annual Meeting of the Association for Information Science & Technology October 25-29, 2020.

of disaster relief activities (e.g., digital humanitarians, online self-support groups); and enabling diverse civic engagement (e.g., digital archives of deleted posts to counter censorship, efforts to counter disinformation campaigns).

ICTs are more than external tools to accomplish goals, in the deterministic sense. Instead, ICTs are bounded by power dynamics and are embedded in contexts. Taking a social informatics perspective, we emphasize the importance of the mutually shaping process between ICTs and society during a global health crisis. Thus, this panel focuses on the use of ICTs by different stakeholders, including individuals, nonprofit organizations, and governments around the globe; we are aiming to explore the following questions:

- What role do ICTs play in a global health crisis?
  - How did different entities around the globe were using ICTs during the COVID-19 pandemic?
  - What were the unique characteristics of ICT use during the COVID-19 pandemic, compared with past crisis?
- How do ICTs affect the existing social order, as the tension between control, autonomy, and power shift?
  - How do ICTs affect conflict, isolation or connections, and specifically, to what extent does ICT use aggravate hidden conflicts, accelerate the collapse of the existing social order, and increase isolation of individuals?
  - To what extent does the use of ICTs forge connections across boundaries and unite individuals?
- What are the theoretical and practical implications of ICT use during a global health crisis?
  - What do we learn about how the context of crisis impacts mutual relationships between ICTs and society, and in particular its impacts on the use of ICTs?
  - What best practices or recommendations can we make regarding ICT use in future emergency or public health contexts?

Each panelist will contribute from their ongoing research in social informatics or health informatics to the main theme of the panel and will aim to answer these questions in order to provide together a holistic view of ICTs role during this global health pandemic. Shengnan Yang will explain the variations of ICT use by nonprofit organizations for crisis responses. Then, Pnina Fichman will explore how ICT utilization forged connection through art creations across the globe, identifying patterns of collective intelligence creativity impacted by scarce resources. Next, Madelyn Sanfilippo will discuss long term privacy implications around ICT governance amidst the pandemic. Then, Xiaohua Zhu will provide analysis of national governments' countermeasures to fight misinformation regarding COVID-19, with an emphasis on information policies. Shijuan Li will then discuss the attitudes, evaluation, acceptance and utilization of social media information in the COVID-19 infodemic by middle-aged individuals. Finally, Ken Fleischmann will report preliminary findings from an NSF RAPID-funded study (with Bo Xie and Min Kyung Lee) on trust in public health information during a pandemic. The panel will provide a holistic view of the relationships between ICTs and society during a global crisis.

1 | ICT USE BY NONPROFIT ORGANIZATIONS IN RESPONDING TO COVID-19 (SHENGNAN YANG)

Using ICTs for COVID-19 crisis interventions is prevalent among governments and societies. ICT uses are associated with how these actors engage in the pandemic response action and survive in the crisis. Nonprofit organizations, key non-state actors and an important bottom-up approach to crisis response, have demonstrated great variations in ICTs uses to cope with the crisis. Their behaviors include, but are not limited to: developing online services, assisting governments' digital initiative implementation, and keeping silent in the digital world. Underlying mechanisms that result in these diverse behaviors are still unknown. This study selected nonprofit organizations in China as a sample and traced their COVID-related social media posts. By conducting a content analysis of these posts, this study focuses on identifying ICTs that nonprofits adopted in order to conduct crisis related activities. Taking the Chinese nonprofit sector as an example, this study is aimed: first, to identify the ICT ecology for nonprofit in China; and second, to understand the relationship between ICT utilization and nonprofits' activities to respond to a public health crisis.

2 | GLOBAL CRISIS RELIEF THROUGH ART IN IMAGINED COMMUNITIES (PNINA FICHMAN)

COVID-19 triggered an unpreceded reliance on ICTs among large segments of the world population, as local governments put millions under "stay at home" order. The intended and unintended consequences of the use of ICTs attract much media, politics, and scholarly attention. During that time, isolated individuals from around the globe united online by their creative endeavors as part of imagined communities. While health, economy, and political considerations emphasized national boundaries, art and ICTs enabled individuals to emerge from isolation and

find common ground to support the wellbeing of others, regardless of their nationality, health, socio-economic status, or political views. Individuals and small groups shared their creations, using common household items and tools, with like-minded others. This study aims to contribute a theoretical understanding of the relationships between ICTs and society, grounded in the analysis of artifacts created and shared among global imagined communities on social media platforms, such as Instagram and Facebook, during the COVID-19 pandemic.

3 | GOVERNING PRIVACY AS CONTEXTS OVERLAP DURING CRISIS (MADELYN ROSE SANFILIPPO)

In order to maintain physical distance during the COVID19 pandemic, ICT platforms originally designed and employed for other distributed uses are repurposed to maintain social connections, provide distributed services, continue to meet business needs, and for virtual education. Contextual goals and values, including privacy norms, which shape these ICTs, yield unexpected outcomes and long-term consequences around information flows, as contexts overlap. While individuals debate whether they work at home, or live at work amidst "the new normal," various privacy governance failures have come to light; simultaneously, regulatory exemptions around privacy are made and enforcement is abated, notably including HIPAA, in order to support telemedicine. Long term privacy impact of ICT governance amidst pandemic will be explored, comparing and contrasting two empirical projects around video conferencing, in the domains of health and education. Practical implications from these studies, including action areas to prevent privacy violations or erosion of protections, will also be compared with, and theoretical implications differentiated from, other crisis situations, such as natural disasters.

4 | THE COVID-19 MISINFODEMIC: REACTIONS FROM NATIONAL GOVERNMENTS (XIAOHUA ZHU)

While COVID-19 spreads all over the globe, the world also experiences an upsurge of fake news, rumors, myths, misinformation, disinformation, conspiracy theories, and even hatred. As United Nations Secretary-General António Guterres said in a video message, a "global 'misinfodemic' is spreading," which travels faster than the virus itself ("Hatred going viral," 2000). While some international non-governmental organizations, including the United Nations and the World Health Organization, are leading the battle against this misinfodemic, virtually all national governments are also addressing the problem directly (e.g., issuing information policies concerning misinformation or publishing "mythbusters") or indirectly (e.g., providing the public with accurate and timely information using ICTs). This study is a comparative study of misinfodemic countermeasures taken by five national governments—Chile, China, Singapore, US, and UK—with an emphasis on ICT use and information policies. How do these governments use ICTs to combat misinformation? What information policies (including laws, policies, regulations, orders, and government announcements) have they issued or updated concerning COVID-19 misinformation? How do these information policies differ and why? Answers to these questions come through an in-depth content analysis of both government websites and other information outlets, in order to facilitate international collaboration amid the epidemic and misinfodemic. This research also enables theoretical discussions of broader information policies issues.

5 | MUDDLING THROUGH AN INFODEMIC: ICT ACCEPTANCE AND UTILIZATION UNDER THE COVID-19 HEALTH CRISIS (SHIJUAN LI, PENGYI ZHANG AND JIUZHEN ZHANG)

The COVID-19 outbreak brought crushing burdens to international healthcare systems and challenged every citizen's health information literacy, with massive amount of information, misinformation, and disinformation. ICTs, especially social media, plays an important role in meeting diverse information needs, demands for online consultation, and online inquiries for the public during this global health crisis. Characteristics of comprehensive use of multiple information sources and excessive amounts of information, on a daily basis, which are typical features of an Infodemic, might be far beyond the users' information processing ability and become a cognitive burden for them. Thus, it is critical to understand how people use ICT to seek for trustworthy, timely, and authoritative information and to avoid misinformation and disinformation. This study examines users' attitudes, evaluation, acceptance, and utilization of social media (i.e. the Wechat public accounts, which have been reported to be the health information sources most frequently used in China). In order to identify the factors with the most influence on users, this work included government officials' accounts, enterprise official accounts, and individuals' public accounts as information sources. It aims to provide

practical understanding of the relationships between social media and users, in order to explore ICTs' role during both the health crisis and infodemic.

6 | TRUST IN PUBLIC HEALTH INFORMATION DURING A PANDEMIC (KENNETH R. FLEISCHMANN, BO XIE, AND MIN KYUNG LEE)

This research in crisis informatics aims to provide evidence about how the general population reacts to the COVID-19 pandemic, and to share the findings with information and public health professionals in order to help them respond to this pandemic and contribute to improvements in our preparedness for future pandemics. Specifically, we will report preliminary findings from a NSF RAPID-funded survey including previously validated instruments (such as the Portrait Values Questionnaire and the Health Information Wants Questionnaire) along with open-ended questions specific to the current COVID-19 pandemic. This project will identify factors that influence trust in public health information, including the role of human values, and how public health information interventions can be tailored to be effective for people of various ages, particularly through tailoring for individuals' values.

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Shengnan Yang is a PhD candidate in the Luddy School of Informatics, Computing, and Engineering at Indiana University in Bloomington. Her main areas of research focus on the interactions between digital technologies and civil society. Focusing on the role of technology in the nonprofit sector, her dissertation studies the effects of digital tools on the social world by examining nonprofit organizations. She employs a mixed-methods approach to conduct research, including qualitative interviews, quantitative surveys, and big data analysis. Before pursuing an academic career, she worked as an IT consultant in Accenture Greater China. Shengnan's publication outlets include *Journal of the Association for Information Science and Technology*, *The Information Society*, *ACM on Human-Computer Interaction*, and *Hawaii International Conference on System Sciences*.

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Xiaohua Zhu is an associate professor at the School of Information Sciences at the University of Tennessee, Knoxville. Her research focuses on digital rights, ownership of intellectual properties, open government data, social informatics, and academic libraries. Lately, she has published research on those areas in Journal of the American Society for Information Science & Technology, Government Information Quarterly, Library and Information Science Research, College and Research Libraries, and Journal of Academic Librarianship.

Madelyn Sanfilippo is a postdoctoral research associate at the Center for Information Technology Policy (CITP) at Princeton University and will join the faculty, as an Assistant Professor, at the University of Illinois at Urbana Champaign in the School of Information Sciences in Fall 2020. She is broadly interested in legal, social, and political issues surrounding information and information technology access, applying a social informatics perspective. Her research empirically explores governance of socio-technical systems, as well as outcomes, inequality, and consequences within these systems, through mixed method research design. Madelyn's work is

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Shijuan Li is an Associate Professor in the Department of Information Management, Peking University, China. Her research interest in Health Informatics focuses on innovative ICT applications in health and social care while empowering the consumers' capabilities in making better decisions, and consumers' searching, access, assessing and utilizing behavior with respect to individual differences that might form positive or evasive behavior styles. Prior joining PKU as a lecturer, Shijuan worked as an information consultant in the Mount Vernon Cancer Network, UK National Health Service (NHS). Her publication appears in journals such as *Informatics for Health and Social Care*, *Studies in Health Technology & Informatics*, *Library and Information Service*, *and MedInfo2019*. Shijuan received her Ph.D. in Health Informatics from SHIRE, University of Salford, U.K.

Kenneth R. Fleischmann is a Professor in the School of Information at the University of Texas at Austin and Founding Chair of Good Systems, a UT Grand Challenge. His research focuses on the role of human values on the design and use of information technologies, including artificial intelligence. He is the author of *Information and Human Values* and he has published in journals such as *JASIST*, *The Information Society*, *Communications of the ACM*, and *Computer*. His research is currently funded by NSF, Microsoft Research, Cisco Research Center, Micron Foundation, and the Public Interest Technology University Network. Ken holds a B.A. in Computer Science and Anthropology from Case Western Reserve University and a M.S. and Ph.D. in Science and Technology Studies from Rensselaer Polytechnic Institute.

How to cite this article: Yang S, Fichman P, Zhu X, Sanfilippo M, Li S, Fleischmann KR. The use of ICT during COVID-19. *Proc Assoc Inf Sci Technol*. 2020;57:e297. https://doi.org/10.1002/pra2.297